

Studies on a cell line from a functional rat thyroid tumor in continuous culture

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A clonal cell line derived from a functional and transplantable rat thyroid tumor was established in continuous monolayer culture by the use of enzymatic dissociation followed by an alternate culture-animal passage procedure. After being implanted back in the animal and again plated in culture, epithelial-like cells aggregated and rearranged themselves over the bottoms of dishes in structures resembling cross sections of a normal thyroid gland. The same morphology and growth pattern were maintained after innumerable subcultures and freeze/thawing periods. Cells grew with a population-doubling time of about 24 h in serum-supplemented synthetic medium. Cell monolayers stained with periodic acid-Schiff (PAS) showed a uniformly epithelial-like morphology; their cytoplasm contained abundant PAS-positive material that was resistant to enzymatic digestion with amylase. Thinlayer chromatography of acid-butanol cell extracts in primary and clonal cultures, followed by a specific and sensitive s